



# Mapecoat PU33

**Flexible coating based on two-component polyurethane resins**



## WHERE TO USE

Especially suitable for the protection of concrete, and as a watertight protection of flat and inclined civil and industrial coverings.

## TECHNICAL CHARACTERISTICS

**Mapecoat PU33** is highly resistant to industrial pollution and atmospheric agents in general, is highly flexible, is highly resistant to tear and to substrate micro-cracks, waterproof to water but permeable to steam, excellently retains colours and is easy to apply.

Once completely hardened, **Mapecoat PU33** can resist the aggressive action of ultraviolet rays and block CO<sub>2</sub> penetration.

**Mapecoat PU33** resists frost and gives a pleasant appearance to the surfaces.

**Mapecoat PU33** meets the main requirements of EN 1504-9 (*"Products and systems for protecting and repairing concrete structures: definitions, requirements, quality control and conformity assessment. General principles for the use and application of systems"*), and the requirements of EN 1504-2 (*"Protection systems for concrete surfaces"*) for class: products for protecting surfaces - coating (coating, C) - protection against the risk of penetration (1.3) (protections against ingress, PI) (ZA.1d) + control of humidity (2.2) (moisture control, MC) and increase in resistivity (8.2) (increasing resistivity, IR) (ZA. 1e).

## RECOMMENDATIONS

- Do not apply **Mapecoat PU33** on surfaces with temperatures below +10°C. The substrate temperature must always be at least +2°C above dew point.
- **Mapecoat PU33** is not recommended for painting directly onto the substrate, but after the application of **Mapecoat E23**.
- It is not recommended to use **Mapecoat PU33** as a coating for surfaces that are continuously immersed in solvents, acid or concentrated alkali solutions.

## APPLICATION PROCEDURE

### Preparation of the substrate

The surfaces must be perfectly clean, sound and dry.

Completely remove any loose parts, dust, traces of form release agents, varnishes or paints applied beforehand by sandblasting or hydro-sand blasting. Seal any cracks and repair damaged parts with mortars from the **Mapegrout** range or **Adesilex PG1**, **Adesilex PG2** epoxy systems. Close porosities and level any uneven parts of the substrate with **Mapefinish**, fine levelling mortar.

**Mapecoat PU33** can only be applied once the substrate has cured completely.

It is not recommended to use **Mapecoat PU33** as a paint directly on the substrate, but after using bonding primers such as **Mapecoat E23**.

Please refer to the relative Technical Data Sheet of the primer to check how it should be applied properly.

# Mapecoat PU33

TECHNICAL DATA (typical values)					
Complies with the following standards:	<ul style="list-style-type: none"> <li>- product certified according to EN 1504-2 ("Protection systems for concrete surfaces"), system 2+ and 3</li> <li>- classes according to EN 1504-2: products for protecting surfaces - coating - protection against the risk of penetration (1.3) (ZA.1d) + control of humidity (2.2) and increase in resistivity (8.2) (ZA. 1e) (C, PI – MC – IR principles)</li> </ul>				
PRODUCT IDENTITY					
Consistency:	thick liquid				
Colour:	RAL 7032 colours - other colours available on request for a minimum quantity of 500 kg				
Density (A+B) (EN ISO 2811-1) (g/cm <sup>3</sup> ):	1.3 ± 0.05				
Dry solids content by volume (A+B) (%):	58 ± 2				
APPLICATION DATA					
It is not recommended to use Mapecoat PU33 as a paint directly on the substrate but after using bonding primers such as:	<b>Mapecoat E23</b>				
Before use the product must be mixed with the relative catalyst and thinner in the following ratios: - part A: - part B:	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">90 p. by weight</td> <td style="width: 50%;">83 p. by volume</td> </tr> <tr> <td>10 p. by weight</td> <td>17 p. by volume</td> </tr> </table>	90 p. by weight	83 p. by volume	10 p. by weight	17 p. by volume
90 p. by weight	83 p. by volume				
10 p. by weight	17 p. by volume				
Dilution ratio:	3-5% MAPEI <b>Thinner for Adhesives</b> or MAPEI <b>Thinner PU</b> if necessary				
Application:	roller, brush, conventional spray or airless				
Conventional spraying instruments: - nozzle diameter (mm): - liquid pressure (Atm): - air pressure (Atm):	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">2-2.5</td> <td style="width: 50%;">1-1.8</td> </tr> <tr> <td>4-5.5</td> <td></td> </tr> </table>	2-2.5	1-1.8	4-5.5	
2-2.5	1-1.8				
4-5.5					
One or two-component piston airless: - nozzle diameter (mm): - exit pressure (Atm): - spraying angle:	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">0.019-0.021</td> <td style="width: 50%;">250-350</td> </tr> <tr> <td>50°-80°</td> <td></td> </tr> </table>	0.019-0.021	250-350	50°-80°	
0.019-0.021	250-350				
50°-80°					
Pot life (at +20°C):	3 hours If the product needs to be diluted use MAPEI <b>Thinner for Adhesives</b> or MAPEI <b>Thinner PU</b> in a percentage from 3% to 5%				
Can be painted over:	min. 12 h - max 24 h at +20°C (sandpapering needed for longer times)				
Time for dry at touch (at +20°C):	6 hours				
Time for dry in depth (at +20°C):	24 hours				
Time for completely hardened (at +20°C):	7 days				
Application temperature range:	from +5°C to +35°C				
Optimal thickness (µm):	400 (dry film)				
FINAL PERFORMANCE					
Aspect:	smooth satin				
Bonding strength to concrete (ASTM D4541) (N/mm <sup>2</sup> ):	> 3 (highways test report)				
Resistance to freeze/thaw cycles in the presence of deicing salts (highways method):	> 50 cycles (highways test report)				
Elongation at failure (%):	420				

**Mapecoat PU33** can be applied after 24 hours, and within 48 hours, after the application of **Mapecoat E23**.

### Preparation of the product

The two **Mapecoat PU33** parts must be mixed together.

Mix the two parts separately then pour component B (hardener) into component A (resin) and mix with a low speed drill until the paste is completely homogeneous.

This is to avoid the air entraining.

Avoid using partial quantities that could lead to accidental measuring errors.

This could interfere with the complete hardening of **Mapecoat PU33**. If dilution is necessary, use from 3% to 5% of MAPEI

**Thinner for Adhesives** or MAPEI **Thinner PU**.

### Application of the product

**Mapecoat PU33** has to be applied in two coats by brush, roller or spray using the conventional methods. Wait from 6 to 24 hours between the two coats. The time depends on the environmental conditions. Protect from pouring rain for at least 12 hours.

**Mapecoat PU33** can be painted over within 24 hours. After 24 hours the surface must be sandpapered.

### Maintenance

The surface painted with **Mapecoat PU33** can be cleaned with water and detergents (make a sample test beforehand).

### Cleaning

Brushes, rollers and airless spray guns must be cleaned with Mapei's **Thinner for Adhesives** before **Mapecoat PU33** dries.

### CONSUMPTION

Consumption is heavily influenced by the absorption and roughness of the substrate, by the colour of the paint applied and according to the application technique used. Under normal conditions, consumption is generally 1.15 kg/m<sup>2</sup> (for two coats of the product).

### PACKAGING

**Mapecoat PU33** is supplied in 23 kg units (component A + component B).

### STORAGE

24 months if stored in a dry place away from sources of heat and flames and at a temperature of between +5°C and +30°C.

### SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

**Mapecoat PU33** comp. A and B are inflammable. It is recommended storing them away from naked flames and sparks, to avoid smoking, to prevent the build up of electrostatic energy and to work in well ventilated areas.

Furthermore, **Mapecoat PU33** comp.

A may cause drowsiness and dizziness and it may cause an irreversible damage if used for lengthy periods. **Mapecoat**

**PU33** comp. B is dangerous if inhaled; it may cause sensitization if it comes in contact with the skin of subjects sensitive to isocyanates. It may irritate the skin, the eyes and the respiratory tract.

During use, wear protective gloves and goggles and take the usual precautions for handling chemicals. If the product comes in contact with the eyes or skin, wash immediately with plenty of clean water and seek medical attention. Do not use in the presence of pregnant women.

Furthermore, **Mapecoat PU33** comp. A is dangerous for aquatic life. Do not dispose of it in the environment.

For further and complete information about the safe use of our product please refer to the latest version of our Safety Data Sheet.

PRODUCT FOR PROFESSIONAL USE.

### WARNING

*Although the technical details and recommendations contained in this product data sheet correspond to the best of our knowledge and experience, all the above information must, in every case, be taken as merely indicative and subject to confirmation after long-term practical application; for this reason, anyone who intends to use the product must ensure beforehand that it is suitable for the envisaged application. In every case, the user alone is fully responsible for any consequences deriving from the use of the product.*

Please refer to the current version of the **Technical Data Sheet**, available from our website [www.mapei.com](http://www.mapei.com)

### LEGAL NOTICE

*The contents of this Technical Data Sheet ("TDS") may be copied into another project-related document, but the resulting document shall not supplement or replace requirements per the TDS in effect at the time of the MAPEI product installation. For the most up-to-date TDS and warranty information, please visit our website at [www.mapei.com](http://www.mapei.com). ANY ALTERATIONS TO THE WORDING OR REQUIREMENTS CONTAINED IN OR DERIVED FROM THIS TDS SHALL VOID ALL RELATED MAPEI WARRANTIES.*

**All relevant references for the product are available upon request and from [www.mapei.com](http://www.mapei.com)**

## PERFORMANCE CHARACTERISTICS FOR CE MARKING ACCORDING TO EN 1504-2 - SYSTEM 2+ AND 3, CLASSES ZA.1d + ZA.1e (C, PI, MC - IR principles)

STANDARD	TEST	RESULTS AND CONFORMITY TO REQUIREMENTS	
EN ISO 2409	oblique cut	result/class:	GT1, in conformity ( $\leq$ GT2)
EN 1062-6	permeability to CO <sub>2</sub>	$\mu$ :	842,773
		$s_D$ (m):	337
		dry thickness according to $s_D$ (m):	0.00040
		result/class:	in conformity ( $s_D > 50$ m)
EN ISO 7783	permeability to water vapour	$\mu$ :	11342
		$s_D$ (m):	4.5
		dry thickness according to $s_D$ (m):	0.00040
		result/class:	I ( $s_D < 5$ m)
EN 1062-3	capillary absorption and permeability to water	$w$ [kg/(m <sup>2</sup> h <sup>0.5</sup> )]:	0.003
		result/class:	in conformity ( $w < 0.1$ )
EN 1062-11 4.1	thermal compatibility: ageing: 7 days at +70°C	result/class:	in conformity (adherence $\geq$ 0.8 N/mm <sup>2</sup> )
EN 13687-1	thermal compatibility: freeze-thaw cycles with immersion in de-icing salts	result/class:	in conformity (adherence $\geq$ 0.8 N/mm <sup>2</sup> )
EN 13687-2	thermal compatibility: thunder-shower	result/class:	in conformity (adherence $\geq$ 0.8 N/mm <sup>2</sup> )
EN 13687-3	thermal compatibility: thermal cycles without immersion in de-icing salts	result/class:	in conformity (adherence $\geq$ 0.8 N/mm <sup>2</sup> )
static EN 1062-7	crack resistance	crack-bridging ability at +23°C ( $\mu$ m):	1633
		result/class at +23°C:	A4 (> 1.25 mm)
		crack-bridging ability at -10°C ( $\mu$ m):	1456
		result/class at -10°C:	A4 (> 1.25 mm)
dynamic EN 1062-7	crack resistance	result/class:	B4. 1
EN 1542	direct traction adherence test	result/class:	in conformity (adherence $\geq$ 0.8 N/mm <sup>2</sup> )
EN 13501-1	reaction to fire	euroclass:	B s1 d0
EN 13036-4	skid resistance	result/class:	II (dry internal surface) (> 40 dry units)
EN 1062-11:2002 4.2	artificial exposure to atmospheric agents	result/class:	in conformity
EN 1081	anti-static behaviour	result/class:	II (electrical resistance > 10 <sup>9</sup> and < 10 <sup>12</sup> Ω)
	hazardous substances	result/class:	in conformity

## FURTHER PERFORMANCE CHARACTERISTICS ACCORDING TO EN 1504-2 REGARDING REQUIREMENTS FOR CLASSES ZA.1d + ZA.1e

STANDARD	TEST	RESULTS AND CONFORMITY TO REQUIREMENTS	
EN ISO 5470-1	abrasion resistance	result/class:	in conformity ( $\Delta$ weight < 3000 mg)
UNI 7928	diffusion of chloride ions	penetration (mm):	0.0
EN ISO 2812-1 - NH <sub>4</sub> <sup>+</sup>	chemical resistance	result/class:	in conformity
EN 13529 - H <sub>2</sub> SO <sub>4</sub> 20%	severe chemical attack resistance	result/class:	class II ( $\Delta$ shore D < 50%)



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